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Applicant: Michihiro OHSUGE

Title: PATTERN GENERATION CIRCUIT, MULTI-PATH
DETECTION CIRCUIT EMPLOYING THE SAME AND
MULTI-PATH DETECTION METHOD

Application No.: 09/770,506

Filing Date: January 29, 2001

Examiner: P. Kumar

Art Unit: 2631

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**INFORMATION DISCLOSURE STATEMENT
UNDER 37 CFR §1.56 and 37 CFR §1.97**

Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Sir:

Submitted herewith on Form PTO-SB/08 is a listing of documents known to Applicant in order to comply with Applicant's duty of disclosure pursuant to 37 CFR 1.56. A copy of each listed document is being submitted to comply with the provisions of 37 CFR 1.97 and 1.98.

The submission of any document herewith, which is not a statutory bar, is not intended as an admission that such document constitutes prior art against the claims of the present application or that such document is considered material to patentability as defined in 37 CFR §1.56(b). Applicant does not waive any rights to take any action which would be appropriate to antedate or otherwise remove as a competent reference any document which is determined to be a prima facie prior art reference against the claims of the present application.

TIMING OF THE DISCLOSURE

The instant Information Disclosure Statement is believed to be filed in accordance with 37 C.F.R. 1.97(b), prior to the mailing date of a first Office Action on the merits (first scenario). If that is not the case, such as in a second scenario in which a first Office Action on the merits has been mailed before the filing of the instant Information Disclosure Statement, then either a certification or fee is required, and a certification is provided below. If neither of the first or second scenarios is the case, such as if a final Office Action or a notice of allowance has been mailed by the PTO (third scenario), then both a certification and fee are required, and in that case a certification is provided below and also the PTO is authorized to obtain the necessary fee to have the instant IDS considered, from Foley & Lardner Deposit Account #19-0741.

CERTIFICATION

The undersigned hereby certifies in accordance with 37 C.F.R. §1.97(e)(1) that each item of information contained in this Information Disclosure Statement was first cited in a communication from a foreign patent office in a counterpart foreign application not more than three (3) months prior to the filing of this Statement.

RELEVANCE OF EACH DOCUMENT

A translation of a portion of a Chinese Office Action that issued June 18, 2004 with respect to a counterpart Chinese patent application is provided below.

"The application relates to a pattern generation circuit, a multi-path detection circuit employing the same and a multi-path detection method. The applicant amended the application documents in response to the First Office Action. After a further examination, the opinions of Examiner are proposed as the following:

1. Claim 1 is rejected under Article 22(2) of the Chinese Patent Law.

Claim 1 claims a pattern generation circuit. Reference 1 (W099/35763A1) discloses a method and apparatus for estimating

multi-path delay. In the page 8-10 and Figure 7 of Reference 1, it describes assign delays block 779 for performing a plurality of correlation in delays to generate correlation results and track the multi-path signals, which functions as the pattern generating means in claim 1. Furthermore, it describes subtraction block 774 for subtracting the largest correlation result from all other correlation results to generate an estimation having a high probability of being correction, which functions as the removing means in claim 1. Accordingly, since the related art, the technical problem to be solved and the technical means adopted of claim 1 are identical to those of Reference 1. The technical solution of claim 1 is identical to that of Reference 1 so that claim 1 does not have novelty provided by Article 22(2) of the Chinese Patent Law.

Article 22(2) of the Chinese Patent Law: Novelty means that, before the date of filing, no identical invention or utility model has been publicly disclosed in publications in the country or abroad or has been publicly used or made known to the public by any other means in the country, nor has any other person filed previously with the Patent Administration Department Under the State Council an application which described the identical invention or utility model and was published after the said date of filing.

2. Claim 2 is rejected under Article 22(2) of the Chinese Patent Law.

The difference between claim 1 and claim 2 is that removing means sequentially removes a power component of the detected correlated peak from the delay profile. In the page 10 steps 4-6 and Figure 7 of Reference 1, it describes a plurality of subtraction blocks 774, 776 and 778 for selecting the largest correlation results and subtracting the largest correlation result from all other correlation results, which is identical to the difference above described. Accordingly, the technical solution of claim 2 is identical to that of Reference 1 so that claim 2 does not have novelty provided by Article 22(2) of the Chinese Patent Law.

3. Claim 3 is rejected under Article 22(2) of the Chinese Patent Law.

The additional technical feature of claim 3 is disclosed in page 10 steps 4-6 of Reference 1. Namely, it describes that sequentially estimating all of paths, generating the correlation function of the next path by using a previous path and subtracting the strongest correlation results to obtain relay estimation and next multi-path signals, wherein the largest correlation and delays contain peak level and peak position, and play a role of reflecting signal features as in claim 1. Accordingly, the technical solution of claim 3 is identical with that of Reference 1 too, and thereby claim

3 does not have novelty provided by Article 22(2) of the Chinese Patent Law.

4. Claim 6 is rejected under Article 31(1) of the Chinese Patent Law.

Claim 6 and claim 4 do not have the same or corresponding special technical features therebetween. Due to independent claim 2 referred by claim 6 lacks novelty, claim 6 and claim 4 does have unity therebetween, and claim 6 does not comply with the provision of Article 33(1) of the Chinese Patent Law.

Article 31(1) of the Chinese Patent Law: An application for a patent for invention or utility model shall be limited to one invention or utility model. Two or more inventions or utility models belonging to a single general inventive concept may be filed as one application.

5. Claims 7 and 8 are rejected under Article 22(3) of the Chinese Patent Law.

The additional technical features of claims 7 and 8 are common sense in the field. Single path is an extreme situation of multi-path and all radio wave could have side lobe. Obviously, the technical solutions of claims 7 and 8 do not have prominent substantive features and represent any notable progress over Reference 1 and common sense, that is, it does not comply with the provision of Article 22(3) of the Chinese Patent Law.

Article 22(3) of the Chinese Patent Law: Inventiveness meant that, as compared with the technology existing before the date of filing, the invention has prominent substantive features and represents a notable progress and that the utility model has substantive features and represents progress.

6. Claim 9 is rejected under Article 22(2) of the Chinese Patent Law.

Claim 9 claims a multi-path detection circuit for detecting a timing of multi-path by measuring a delay profile of a transmission path. Reference 1 (W099/35763A1) discloses an apparatus for estimating multi-path delay. In the page 8-10 and Figure 7 of Reference 1, it describes assign delays block 779, which corresponds to the generating means in claim 9. Furthermore, it describes subtraction block 774 for subtracting the largest correlation result from all other correlation results to generate a correct estimation of timing, which is a specific method of the method for detecting position of the correlated peak in claim 9. Accordingly, since the related art, the technical problem to be solved, and the technical means adopted of claim 9 are identical to

those of Reference 1. The technical solution of claim 9 is identical to that of Reference 1 so that claim 1 does not have novelty provided by Article 22(2) of the Chinese Patent Law.

7. Claim 10 is rejected under Article 22(2) of the Chinese Patent Law.

The additional technical feature of claim 10 is disclosed in page 10 steps 4-6. Based on the opinions in points 2 and 3 above described, it is possible to derive the technical solution of claim 10 is disclosed in Reference 1 too, that is they have the same technical solution. Accordingly, the technical solution of claim 10 does not have novelty provided by Article 22(2) of the Chinese Patent Law.

8. Claim 11 is ejected under Article 22(2) of the Chinese Patent Law.

The additional technical feature of claim 11 is identical with that of claim 3. Based on the opinion on claim 3, it is possible to derive the technical solution of claim 11 is identical with that of Reference 1 too. Accordingly, claim 11 does not have novelty provided by Article 22(2) of the Chinese Patent Law.

9. Claims 14 and 17 are rejected under Article 31(1) of the Chinese Patent Law.

The situations of claims 14 and 17 are identical with that of claim 6, that is, claims 14 and 17, and claim 4 do not have unity therebetween respectively. Based on the opinions stated in point 4, claims 14 and 17 do not comply with the provision of Article 31(1) of the Chinese Patent Law.

10. Claims 15 and 16 are rejected under Article 22(3) of the Chinese Patent Law.

The situations of claims 15 2nd 16 are identical with those of claims 7 and 8. Based on the opinion of point 5, the technical solutions of claims 15 and 16 do not have prominent substantive features arid represent any notable progress over Reference 1 and common senses in the field. Thereby, they do not comply with the provision of Article 22(3) of the Chinese Patent Law.

11. Claim 17 is rejected under Article 26(4) of the Chinese Patent Law.

The technical feature 'position interval judgment means' is not described in the description so that claim 17 is not supported by the description in form. Accordingly, claim 17 does not comply with the provision of Article 26(4) of the Chinese Patent Law. The

applicant may add this technical feature into the SUMMARY OF THE INVENTION portion of the Specification to overcome this defect, while the defect of lack of unity should be obviated.

Article 26(4) of the Chinese Patent Law: The claims shall be supported by the description and shall state the patent of tile patent protection asked for.

12. Claim 18 is rejected under Article 22(2) of the Chinese Patent Law.

Claim 12 claims a multi-path detection circuit. In the pages 8-10 and Figure 7 of Reference 1, it describes block 771 (correlator), block 772 (store N+1 correlations), block 773 (select the one with largest \parallel^2), block 779 (assigns delays), block 774 and 776 (subtractor). These blocks respectively play the san; role as matched filter, delay profile storing means, maximum value retrieving means, pattern. generating means and preparing means of claim 18. Furthermore, in page 10 steps 4-6, it describes after estimating all paths the block 779 continuously repeats new correlations to provide delay estimations and track the multi-path signals, wherein the block 773 selects the largest correlation result from the correlation results which is sent from the block 779 by block 773 and stored in the block 773, and then., send it to subtractor for performing the subtracting operation. Obviously, this repeating process can be considered as the technical feature stated in the last sentence of claim 18. Since the related art, the technical problem to be solved and the technical means adopted of claim 18 are identical to those of Reference 1. The technical solution of claim, 18 is identical to that of Reference 1 so that claim 18 does not have novelty provided by Article 22(2) of the Chinese Patent Law.

13. Claim 19 is rejected under Article 22(2) of the Chinese Patent Law.

The additional technical feature of claim 19 is disclosed in pages 8-10 and Figure 7 of Reference 1. The signal for each path is generated by means of subtracting the last largest correlation result (containing peak and peak position, namely, delays). That is, the pattern for next path signal is generated based on the previous one. Accordingly, the technical, feature of claim 19 is identical with that of Reference 1, and thereby claim 19 does not comply with the provision of Article 22(2) of the Chinese Patent Law.

14. Claim 20 is rejected under Article 22(2) of the Chinese Patent Law.

The technical feature of claim 20 is similar to that of claim 3. Based on the opinion, on claim 3, the technical feature of claim 20 is identical with that of Reference 1. Accordingly, claim 20 does not comply with the provision of Article 22(2) of the Chinese Patent Law either.

15. Claims 21-24 are rejected under Article 31(1) of the Chinese Patent Law.

Claims 21-24 and claim 4 do not have the same or corresponding special technical features therebetween, since the independent claims 2 and 18 referred by them do not have inventiveness and the additional technical features of claims 21-24 are not identical with that of claim 4. Accordingly, claims 21-24 do not comply with the provision of Article 31(1) of the Chinese Patent Law.

16. Claims 22 and 23 are rejected under Article 26(4) of the Chinese Patent Law.

The technical feature 'coefficient calculating means' is not described in the description so that claims 22 and 23 are not supported by the description. The applicant may add this technical feature into the SUMMARY OF THE INVENTION portion of the Specification to overcome this defect.

17. Claim 25 is rejected under Article 22(2) of the Chinese Patent Law.

The difference between claim 15 and claim 18 is the detail description of the peak position and correlation power, but which are parameters related the correlation value. Accordingly, the technical solution of claim 25 is identical with that of Reference 1, and thereby claim 25 does not comply with the provision of Article 22(2) of the Chinese Patent Law.

18. Claim 26 is rejected under Article 26(4) of the Chinese Patent Law.

Claim 26 and claim 4 do not have the same or corresponding special technical features therebetween., since claims 2 and 18 respectively referred by them do not have novelty and inventiveness. Accordingly, claim 26 and claim do not have unity therebetween, and do not comply with the provision of Article 31(1) of the Chinese Patent Law.

19. Claims 27 and 28 are rejected under Article 22(3) of the Chinese Patent Law.

The situations of claims 27 and 28 are identical with that of claims 7 and 8. Based on the opinion of point 5, the technical solutions of claims 27 and 28 do not have prominent substantive features and represent any notable progress over Reference 1 and common, senses in the field. Thereby, they do not comply with, the provision of Article 22(3) of the Chinese Patent Law.

20. Claim 29 is rejected under Article 31(1) of the Chinese Patent Law.

Claim 29 and claim 4 do not have the same or corresponding special technical features therebetween, and do not comply with the provision of Article 31(1) of the Chinese Patent Law. Meanwhile, the technical, feature 'position interval judgment means' is not stated in die description so that claim 29 is not supported by the description in form. Accordingly, claim 29 does not comply with the provision of Article 26(4) of the Chinese Patent Law.

21. Claim 30 is rejected under Article 22(2) of the Chinese Patent Law,

The method independent claim 30 corresponds to the product independent claim 9. Based on the opinions on claim 9, the technical solution of claim 30 is identical with that of Reference 1 so that claim 30 does not comply with the provision of Article 22(2) of the Chinese Patent Law.

22. Claims 31, 32, 35 and 36 are rejected under Article 22(2/3) of the Chinese Patent Law.

Claims 31, 32, 35 and 36 correspond to product claims 10, 11, 12 and 16 respectively. Based on the opinions stated in points 7, 8 and 10, claims 31 and 32 lack novelty and claims 35 and 36 lack inventiveness.

23. Claims 35 and 38 are rejected under Article 31(1) of the Chinese Patent Law, Claims 35 and 38 and claim 4 do not have the same or corresponding special technical features therebetween so that claims 35 and 38 do not comply with the provision of Article 31(1) of the Chinese Patent Law.

24. Each portion of the Specification lacks sub-title thereof so that the Specification does not comply with the provision of Rule 18 of the Implementing Regulations of the Chinese Patent Law.

25. There is an unclear expression in Chinese text in the Specification so that the latter does not comply with the provision

of Rule 18(3) of the Implementing Regulations of the Chinese Patent Law.

26. There are several typing errors as below:

26.1 In page 2 line 2 (English text), it describes 'Fig. 5', but there is not a Fig. 5 in Drawings.

26.2 In page 2 line 13, the abbreviation 'DS-WCDNA' should be 'DSWCDMA'.

26.3 In page 18 line 24, page 19 line 13, page 22 lines 3, 4, 5, 9 and 10, the phrase 'maximum value retrieving: portion 7' should be 'maximum value retrieving portion 13'.

In summary, the applicant should reply the problem proposed in the Office Action in due course, and the application documents must be amended, otherwise, the present application would be rejected. The amendments to the application documents should meet the requirement of Article 33 of the Chinese Patent Law, that is, should not extent beyond the scope of the application document as originally filed."

Applicant's statements regarding the Chinese Office Action are based on a partial translation that Applicant's representative obtained. These statements should in no way be considered as an agreement by Applicant with, or an admission of, what is asserted in the Chinese Office Action.

Applicant respectfully request that the listed documents be considered by the Examiner and formally be made of record in the present application and that an initialed copy of Form PTO/SB/08 be returned in accordance with MPEP §609.

Respectfully submitted,

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